MINCHU NEWSLETTER

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Volume 2 | Issue 2 | June 2018

Vision and Mission of the Institute

Vision

- To be one of the premier Institutes of Engineering and Management education in the country.

Mission

- To provide Engineering and Management education that meets the needs of human resources in the country.
- To develop leadership qualities, team spirit and concern for environment in students.

Objectives

- To achieve educational goals as stated in the vision through the mission statements which depicts the distinctive characteristics of the Institution.
- To make teaching-learning process an enjoyable pursuit for the students and teachers.

Vision and Mission of the Department

Vision

- To be a premier department for education in Electrical and Electronics Engineering in Karnataka State, moulding students into professional Engineers.

Mission

- To provide teaching/learning facilities in Electrical and Electronics Engineering for easy adaptation to industry and higher learning.
- Provide environment for self learning to meet the challenges of changing technology and inculcate team spirit and leadership qualities to succeed in professional career.
- Empathize with the societal needs and environmental concerns in Electrical & Electronics Engineering practices.

Program Educational Objectives (PEOs)

After 2/3 years of graduation, the students will have the ability to :

- Analyze, design and propose solutions in the field of Electrical & Electronics Engineering and adapt to changes in technology by self learning.
- Work effectively as individuals and exhibit leadership qualities in a team to meet the goals of the program or the organization.
- Work with professionalism and concern for environment to meet the societal needs
- Excel in professional career by acquiring higher education.

"MINCHU" from the department of Electrical & Electronics Engineering is dedicated to Tessy Thomas, the "Missile Woman of India". She is one of the country's leading experts in ballistic missiles and is the project director for the Agni-IV missile at the Defense Research and Development Organisation (DRDO). She is the first woman to lead a missile team in India and, is also known as "Agniputri" and has been elevated to D-G Aero of DRDO. She is an Electrical Engineering Graduate from the Thrissur Government Engineering College,did herM.Tech in Guided Missile from the Institute of Armament Technology, Pune and has also pursued MBA in Operations Management and Ph.D. in Guided missiles. She received the LalBahadurShastri National Award for her contribution in making India self-reliant in the field of missile technology.

CONTENTS

B. N. M. Institute of Technology

(Approved by AICTE, Affiliated to VTU, ISO 9001:2008 certified and Accredited as grade A Institution by NAAC)

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Vidyaya Amrutham Ashnuthe

EDITOR'S DESK

Dear Readers,

Welcome to the Volume-2, Issue-2 of EEE department Newsletter "MINCHU". This edition of MINCHU is dedicated to Tessy Thomas, the "Missile Woman of India". This is an effort to recognize them for the contribution made by them.

The Solar Park at Pavagada is set to become the world's largest when it attains its full potential of 2,000 MW. We are proud that Karnataka has attained this milestone. An article has been included in this issue to give brief idea of this project. Articles on the magic material Graphene and electric aircraft have also been included to give a feel of the technology development. Students have rummaged through the vast data available and have written these articles.

We are happy to share that one of the projects groups of VIII semester exhibited their project "Human Energy Harnessing" in MANTHAN Business Competition 2018 conducted by Karnataka state Government and also at National Level Expo on Science and Technology 2018 at Nashik. It was well appreciated and was suggested to further develop the prototype to make into a product form.

We hope this has given them a good practice in identification of new technologies and learning about them.

The department of EEE has had a few staff additions. We take this opportunity to welcome Dr. V, Muralidhara, Professor, Dr.SudalaiShunmugam, Associate Professor and Dr. P B Savitha, Associate Professor. Dr.Muralidhar and Dr. P B Savitha have a long experience in the field of academics and Dr.Sudalai has walked into teaching after research experience.

The release of this newsletter has required a generous amount of time and effort and I would like to thank all the staffs members of our department for helping me pull this through. I would also thank the young minds who responded to our call and contributed in this newsletter.

ABOUT EEE DEPARTMENT

The Department of Electrical & Electronics Engineering started in the Year 2002 with an intake of 60 students. The department offers UG program in Electrical & Electronics Engineering and M.Tech in Computer Applications in Industrial Drives. The department is currently headed by Dr. R.V. Parimala. The department has well equipped laboratories and Research & Development centre. It has excellent staff members, many of whom have secured University ranks in their post graduate degree from reputed Institutions. They regularly participate in workshops and present technical papers in International / National Conferences to upgrade themselves. The faculty members of the department hold various positions in University body such as Paper setters, Examiners of UG/PG and PhD Programs. The department has various Professional Society Memberships and an in-house association to provide platform for developments in the field of Electrical & Electronics Engineering. Five faculty members are pursuing PhD program under VTU. The staff members have delivered several Invited lectures.

The students have consistently good performances in the University examinations. The department has seventeen university Ranks to its credits. The students have excelled in technical paper presentations, sports, yoga and cultural activities.

The department conducts workshops & conferences regularly which are well attended.

ELECTRIC PLANES

With quiet electric motors and the ability to take off and land vertically from rooftops and parking lots, self-flying "air taxis" like the Airbus Vahana and the Kitty Hawk Cora are being hailed as the next big thing for getting around town and to and from airports.

But short hops on air taxis will be just part of a new air travel ecosystem. In coming years, a new generation of electric and hybrid-electric airplanes including "electroliners" capable of carrying 100 or more passengers will take to the skies.

Electric and hybrid-electric airplanes (which use a mix of battery and conventional power) promise some big advantages over jets and fuel-powered propeller airplanes. They will be much quieter for passengers and people who live near airports, and their computer-controlled, electrically driven propellers will make for smoother, more comfortable flights. And because electric motors cost less to operate and maintain than fuel-powered aircraft engines, electric airplanes could also mean lower costs for airlines and perhaps cheaper airfares for passengers.

With more than 40,000 flights over America each day, most by jet aircraft, air transport accounts for roughly 3 percent of annual carbon emissions in the U.S., as well as a big proportion of air pollutants like sulphur oxides and hydrocarbons. But electric planes, powered by batteries that can be recharged on the ground from the electricity grid, produce no emissions in flight. And hybrid-electric planes are designed to burn far less fuel than conventional propeller or jet planes.

HYBRIDS IN THE SKIES

Because jet fuel is a very efficient way to store energy compared to even the best batteries, jets will rule the skies for years to come especially for transoceanic and other long-haul flights. Lithium-ion batteries are getting cheaper, but they are not getting much smaller, and inventing better batteries is a key area of research for electric aircraft developers.

For now, smaller electric and hybrid-electric planes could soon be used for flight training and urban air-taxis as well as for some of the regional air routes flown today by turboprop commuter aircraft with up to 30 passenger seats.

Hybrid-electric airplanes will use fuel-powered engines and batteries to drive electric propellers, or use electrically driven propellers alongside conventional turboprop or jet engines. Though hybrids donot do away with fuel entirely, their electric motors facilitate designs that are impossible for planes with fuel-powered engines alone, says Dr. Richard Anderson, a professor of aerospace engineering at Embry-Riddle Aeronautical University in Daytona Beach, Florida.

NASA's N3-X concept

For example, hybrid aircraft could have dozens of electric propellers distributed along a wing for aerodynamic efficiency, or to make vertical takeoffs and landings like a helicopter (but with much less noise).

Boeing-backed Zunum Aero, based in Kirkland, Washington, is working on a 12-seat hybrid-electric commuter aircraft to take wing in the early 2020s, with a 50-seater to follow at the end of the decade. Airbus is working on a 19-seat hybrid aircraft for the 2020s, and has more distant plans for a 100-seat hybrid-electric electro-liner. Based on the N3-X concept from NASA, the plane would use an advanced aerodynamic design driven by rows of electric "thrusters".

Other aircraft manufacturers are moving forward with electric planes, including Los Angeles startup Wright Electric. In partnership with the U.K. budget airline EasyJet, it hopes to have a 180-seat electric airliner flying routes of up to 300 miles — but not until 2027.

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Reference:
https://www.nbcnews.com/mach/science/electric-planes-promise-big-benefits-air-passengers-planet-ncna862001

UNKNOWN FACTS AND MISCONCEPTIONS

- Ever wondered ,why we get stuck to the electric source (wire, any appliance, etc)

The electric current passing through our body creates a magnetic field affecting the iron present in our blood creating a magnetic effect due to which we get stuck to the electric source.

Well it's a MISCONCEPTION.

The ACTUAL reason is that it freezes our muscles as the current affects our nervous system due to which we cannot move.

- ***Another misconception people have is regarding the speed of electrons on the surface of conductor (not inside the conductor).***

  Many people still believe that the electrons move with the speed of light due to which immediately after switching on an appliance, it starts working.

  Well let me tell you that the speed (drift velocity) of electrons is just about 1cm/sec.

  Actually the reason behind this speed of electricity is the presence of electric field. This field forces all the electrons to move in one direction (i.e. opposite to the direction of electric field) & since the conductor contains large amount of electrons, the electrons at the ends of the conductor start moving which are further followed by the electrons behind them. This creates a cycle which works almost at the speed of light.

- Electricity travels as fast as the speed of light-about 300000 km/sec.
- One 60 watt light bulb is the equivalent of about 25000 fireflies.
- Google searches account for 0.013% of the world's energy usage. The energy required for 100 searches = burning a 60-watt light bulb for 28 minutes.
- A small silicon chip of which could easily fit in our hand contains more than **100000000 transistors**.
- Did you know that electricity plays a role in the way your heart beats? Electricity causes muscle cells in the heart to contract. Electrocardiogram (ECG) machines, used by medical professionals, measure the electricity going through the heart. As the heart beats in a healthy person, the ECG machine displays a line moving across the screen with regular spikes.

(Reference: Quora, www.electrical4u.com, www.berwickelectric.com, www.electricalindia.in)

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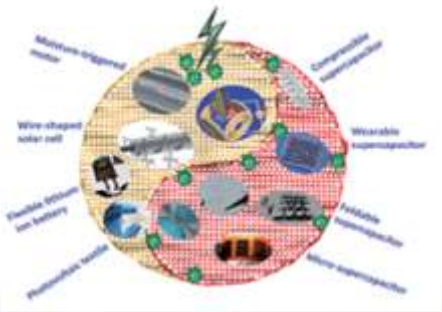
GRAPHENE: APPLICATIONS

Graphene is a one atom thick sheet of carbon atoms arranged in a honeycomb like pattern. It is the well-publicised and now famous two-dimensional carbon allotrope, is as versatile a material as any discovered on Earth. Its amazing properties as the lightest and strongest material, compared with its ability to conduct heat and electricity better than anything else, mean that it can be integrated into a huge number of applications. This means that graphene is used to help improve the performance and efficiency of current materials and substances, but in the future it will also be developed in conjunction with other two-dimensional (2D) crystals to create some even more amazing compounds to suit an even wider range of applications. To understand the potential applications of graphene, you must first gain an understanding of the basic properties of the material.

Optical Electronics

One particular area in which we will soon begin to see graphene used on a commercial scale is that in optoelectronics; specifically touch screens, liquid crystal displays (LCD) and organic light emitting diodes (OLEDs). For a material to be able to be used in optoelectronic applications, it must be able to transmit more than 90% of light and also offer electrical conductive properties exceeding 1 x 10^6 $\Omega^{-1}m^{-1}$ (S/m) and therefore low electrical resistance. Graphene is an almost completely transparent material and is able to optically transmit up to 97.7% of light. It is also highly conductive, as we have previously mentioned and so it would work very well in optoelectronic applications such as LCD touchscreens for smartphones, tablet and desktop computers and televisions.



Applications of Graphene

Currently the most widely used material is indium tin oxide (ITO), and the development of manufacture of ITO over the last few decades time has resulted in a material that is able to perform very well in this application. However, recent tests have shown that graphene is potentially able to match the properties of ITO, even in current (relatively under-developed) states. Also, it has recently been shown that the optical absorption of graphene can be changed by adjusting the Fermi level. While this does not sound like much of an improvement over ITO, graphene displays additional properties which can enable very clever technology to be developed in optoelectronics by replacing the ITO with graphene. The fact that high quality graphene has a very high tensile strength, and is flexible (with a bending radius of less than the required 5-10mm for rollable e-paper), makes it almost inevitable that it will soon become utilized in these aforementioned applications.

Composite Materials

Graphene is strong, stiff and very light. Currently, aerospace engineers are incorporating carbon fibre into the production of aircraft as it is also very strong and light. However, graphene is much stronger whilst being also much lighter. Ultimately, it is expected that graphene is utilized (probably integrated into plastics such as epoxy) to create a material that can replace steel in the structure of aircraft, improving fuel efficiency, range and reducing weight. Due to its electrical conductivity, it could even be used to coat aircraft surface material to prevent electrical damage resulting from lightning strikes. In this example, the same graphene coating could also be used to measure strain rate, notifying the pilot of any changes in the stress levels that the aircraft wings are under. These characteristics can also help in the development of high strength requirement applications such as body armour for military personnel and vehicles.

Photovoltaic Cells

Offering very low levels of light absorption (at around 2.7% of white light) whilst also offering high electron mobility means that graphene can be used as an alternative to silicon or ITO in the manufacture of photovoltaic cells. Silicon is currently widely used in the production of photovoltaic cells, but while silicon cells are very expensive to produce, graphene based cells are potentially much less so. When materials such as silicon turn light into electricity it produces a photon for every electron produced, meaning that a lot of potential energy is lost as heat. Recently published research has proved that when graphene absorbs a photon, it actually generates multiple electrons. Also, while silicon is able to generate electricity from certain wavelength bands of light, graphene is able to work on all wavelengths, meaning that graphene has the potential to be as efficient as, if not more efficient than silicon, ITO or (also widely used) gallium arsenide. Being flexible and thin means that graphene based photovoltaic cells could be used in clothing; to help recharge your mobile phone, or even used as retro-fitted photovoltaic window screens or curtains to help power your home.

Energy Storage

Currently, scientists are working on enhancing the capabilities of lithium ion batteries (by incorporating graphene as an anode) to offer much higher storage capacities with much better longevity and charge rate. Also, graphene is being studied and developed to be used in the manufacture of supercapacitors which are able to be charged very quickly, yet also be able to store a large amount of electricity. Graphene based micro-supercapacitors will likely be developed for use in low energy applications such as smart phones and portable computing devices and could potentially be commercially available within the next 5-10 years. Graphene-enhanced lithium ion batteries could be used in much higher energy usage applications such as electrically powered vehicles, or they can be used as lithium ion batteries are now, in smartphones, laptops and tablet PCs but at significantly lower levels of size and weight.

Reference: https://www.graphenea.com/pages/graphene-uses-applications

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FUTURE OF ROBOTICS

Robotics is an indivisible and agile branch of artificial intelligence.The existence of robotics was present even in1400B.C, where Babylonians developed the Clepsydra,which is considered as one of the first robotics device.Robotics originated with the goal of making human-likemachines.

There are number of reasons to believe that the future of robotics is a bright one. For aCommon man,the expectation from real-life robots is as high as seen in science friction.Ofcourse,we have to keep in mind that fiction, is not real. In time,we are sure to achieve greatheights, but it is this expectation that has lead to such a drift growth rate,though it is unrealisticto expect results in a short while.In industrialspace alone, robotics could contribute upto to ₹1.2 trillion invalue by 2025,through labour saving productivity gains. Robotics in medicalField has reached upto nano-robots which can be swallowed, in order to analyse internalorgans. And has dwarf the manufacturingsegments in industries.Man has been so intoxicated by robotics,that it has become partof our daily routine,without which thefunctioning of the present world would not takeplace smoothly to the expected scale. It is said that-"BEFORE MAKING A ROBOTDANCE LIKE MAN, MAN HAS STARTED TODANCE LIKE ROBOTS".The effect of robots is very obvious.Robotics is not only a partofDeveloping science and technology,but a inseparable organ of human life.With in decades,Robots will emerge as a new species of man but they will be more specialized and trust-worthy than us.Man himself would likeTo work with a robot, rather than another man(labour) so as to save time and energy.
ARobot will soon be the perfect man! And canBe deputize to fill the voids which man can't.

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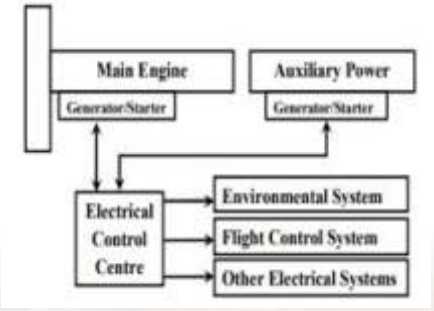
MORE ELECTRIC AIRCRAFTS

An electric aircraft is powered by electric motors, driving thrust-generating propellers or lift-generating rotors. The power supply required may be supplied by solar panels like the Solar Impulse and Solar Impulse 2, Swiss experimental solar powered aircrafts. They may also be supplied by batteries on board, ultra capacitors and fuel cells.
Battery operated aircrafts are quite prevalent, even though they may limit the design of the aircraft due to their weight. A gas turbine is extremely efficient when it is operating optimally, but it is not very efficient in all phases of flight. During take-off, an aircraft requires double the power that it requires in cruise. If electricity could be used in this phase of the flight, it could dramatically reduce both fuel consumption and noise. This saving in cost and the reduction in noise could change the way we travel.

More Electric Aircrafts:

Electric motors can be made quite light and small and still develop considerable power with high reliability—they scale well. Air-breathing engines, both reciprocating and turbine, have many more moving parts, are more complex. Driven by the demand to optimize aircraft performance, decrease operating and maintenance costs, increase dispatch reliability, and reduce gas emissions - have underscored the aircraft industry's renewed push toward the concept of more electric aircraft (MEA), and ultimately an all-electric aircraft. Specifically, the MEA concept provides for the utilization of electric power for all non-propulsive systems. Traditionally, these non-propulsive systems are driven by a combination of different secondary power sources such as hydraulic, pneumatic, mechanical and electrical. Recent technological advances in the field of power electronics, fault-tolerant architecture, electro-hydrostatic actuzators, flight control systems, high density electric motors, power generation and conversion systems have ushered the era of the MEA.



Integrated more electric aircraft systems

Adoption of the MEA concept is seen as critical enabler for the aircraft industry to unlock significant improvements in terms of aircraft weight, fuel consumption, total life cycle costs, maintainability and aircraft reliability. Power generation management, passenger comfort, air pressurization and conditioning, configuration management or flight control and operations: all of these functions make use of a lot of power on board an aircraft, and are better handled by an electric system.

The "more electric" focus permits the reduction in the number of power transfer system functions and utilize the potential of ultra-reliable miniaturized power electronics, fault tolerant electrical distribution systems and electric generators / motor drives / actuators to increase performance.

Aeroplanes like the Airbus A380 and the Boeing 787 are major models designed with increased electrical components. High-power electricity first really appeared in large commercial aircraft in the early 2000s with the removal on board the Airbus A380 of one of the three traditional hydraulic circuits and its replacement with 100% electrical circuits dedicated to the redundancy of flight controls. The programme has also adopted an electrically actuated thrust reverser. The Boeing 787 Dreamliner meanwhile introduced electrical systems to replace the pneumatic circuit and in the brakes.

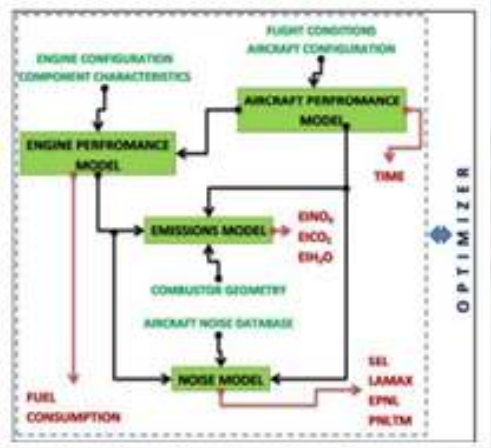
Other Aircrafts:

Companies such as Safran S.A., Boeing, Airbus, and Raytheon have already revealed plans to re-conceptualize the modern airplane. At Boeing, engineers have created the SUGAR Volt concept plane which combines electricity and fuel to power flight, much like a hybrid automobile does. Airbus unveiled a battery-powered aircraft called an E-Fan X, in collaboration with Rolls-Royce plc and Siemens. The startup Zunum Aero's airplane design has a 'series hybrid' powertrain: propulsion is electric, with only an electric motor powering the drivetrain, but the engine extends the battery's range by generating power for the motor. Most hybrid electric cars, by contrast, use parallel hybrid or series-parallel hybrid powertrains. Bye Aerospace on the other hand, has designed an electric, small two seater aircraft, in pursuit of an optimal motor design, and the exclusion of power consuming transmission. Many unmanned and manned aircrafts and quadcopters are also battery operated.

Environmental Impact:

It is estimated that air transport moves over 2.2 billion passengers annually and that by the year 2050 the current commercial aircraft fleet will be doubled. Moreover, it is expected that within the next 20 years, demand for air travel will increase between 4-5% per year.

With the advancement in the technology of electric and hybrid aircrafts, the environmental impacts of aviation fuel (emission of CO2, NOx), water vapour, noise, heat and particulates can be reduced, if not completely eliminated. The Green Aircraft Trajectories Under Air Traffic Management Constraints (GATAC) framework allows the user to set-up a flight case by defining initial and final flight points as well as flight constraints. This is a useful tool which enables optimization of fuel consumption and time trajectory to give better efficiency.



Typical set up in GATAC for trajectory optimization

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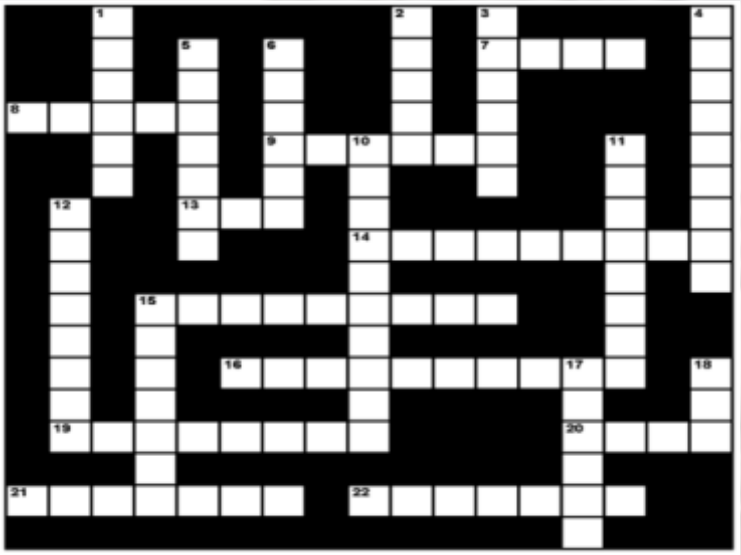
PAVAGADA SOLAR PARK - "SHAKTI STHALA"

Karnataka achieved one milestone in the solar sector during January 2018 by inaugurating the first phase of the Pavagada Solar Park located in Thirumani of Pavagadataluk, Tumkur district, Karnataka, which set to become the World's largest when it attains its full potential of 2,000 MW. It has been named as "Shakti Sthala". It is spread over a total area of 13,000 acres, over five villages and is a benchmark in the unique people's participation in power model put on ground. 600 MW of power was commissioned by 31st January 2018 and a further 1,400 MW are planned by December 2018. The total investment required to build 2,000 MW of capacity was estimated at ₹14,800 Crores. The park's development is anchored by the Karnataka Solar Power Development Corp. Ltd (KSPDCL), an entity formed in March 2015 as a joint venture between Karnataka Renewable Energy Development Ltd (KREDL) and Solar Energy Corp. of India (SECI).

Pavagada Solar Power plant – "Shakti Sthala" in PavagadaTaluk, Karnataka

CROSS WORD



ACROSS

7. Unit of Electrical Power, named after the Scottish Inventor of the steam Engine.
8. A rotating machine that transforms electrical energy into mechanical energy.
9. The kind of electricity you create by rubbing a balloon on your head.
13. Atom or group of atoms that carries a positive or negative electric charge as a result of having lost or gained one or more electrons.
14. Emission of radiant energy in the form of waves or particles.
15. It transmits electricity, like copper.
16. Opposition to the passage of an electric current.
19. Elementary particle consisting of a charge of negative electricity.
20. Smallest particle of an element that can exist either alone or in combination.
21. Uncharged elementary particle.
22. Electric potential or potential difference.

DOWN

1. Elementary particle that carries a positive charge.
2. Electromagnetic radiation in the wavelength range including infrared, visible, ultraviolet and X-rays.
3. Device for making, breaking or changing the connections in an electrical circuit.
4. Flash produced by a discharge of atmospheric electricity.
5. Complete path of an electric current including the source of electric energy.
6. Inventor of the electric light bulb.
10. Force acting on particles of matter, tending to draw them together.
11. Electrical charge with more protons than electrons.
12. Electrical charge with more electrons than protons.
15. Electrical flow through a conductor.
17. Definite quantity of electricity.
18. Unit of electrical resistance.

India added 269.64 MW of renewable energy capacity in the month of April, 2018 taking the total grid connected clean energy capacity to 70,053.81 MW as on 30 April 2018. (Source: Economic Times-PGCIL).

- One week Faculty Development Program on "**Modern Power Electronic Drives: Design & Future Trends**" was organized by the department of Electrical & Electronics Engineering, BNMIT from 16th to 20th January 2018.

Keynote Address by Dr. K Uma Raofrom RVCE

A Visit to Baiyappanahalli Metro station as a part of FDP

- Two days' Workshop on "A to Z of Transformer Design" was organized by the department of Electrical & Electronics Engineering, BNMIT from 17th and 18th, February 2018.The VI and VIII semester students of EEE attended the workshop and gained immense knowledge about the practical considerations in designing a transformer.

Sri. T V Ramaswamy, as resource person to workshop on "A to Z of Transformer Design"

"A to Z of Transformer design"- Workshop conducted for VI semester students of EEE Department

- The MATLAB classes on Basic features, creating variables, arrays, script files etc for VI sem EEE Students by Smt. P B Savitha, Associate Professor and "PSpice applications to electric circuits for IV sem EEE students by Smt. Shubha Rao K, Associate Professor, Smt. KaranamVasudha, Assistant Professor and Savita Sangappanavar, Assistant Professor, Department of EEE, BNMIT" were conducted on 7th and 15th February 2018, under department club activities. The students gained Basic software skills of P-Spice and MATLAB, which help them in their forth coming semesters.

"P-Spice Applications to electric circuits" for IV semester students

"Hands-on Session-Introduction to P-Spice Applications" for IV Semester students

India has become World's third largest producer of electricity in 2017 producing 1,160 billion units of electrical energy.

- Industrial visits enhance the practical knowledge of students to empower them with the recent developments in the core field and also to provide with a fair idea of the work environment at the power station. In this concern, the department of Electrical and Electronics Engineering, BNMIT organized **Industrial Visitfor VIII semester students** of EEE department from 4th to 7th March 2018 to Adani, Udupi Power Corporation Limited and Varahi Hydro power plant, Hosangadi, Udupi.Adani power plant is a coal based thermal power station with an installed capacity of 1200 MW and became fully operational in September 2012. The Varahi Hydro Power plant has underground Power house with power generating capacity of 4 X 115 MW.

Industrial Visit organized for VIII semester students

A Visit to Adani, Udupi Power Corporation Limited by VIII semester students

- A Technical talk on "**Emerging Trends in Power Transmission**" by Dr Vasudev, Additional Director and Group Head, CPRI, Bangalore was organized in the department of EEE, BNMIT on 16th April 2018. The students who secured First class with Distinction in the VTU exams of Dec 2017-Jan 2018 were felicitated with memento during the function.



Technical talk by Dr.Vasudev, Group Head, CPRI, Bangalore


Teaching staffs of EEE Department

STAFF PUBLICATIONS

- Avani Pujara, Dr. S.M. Bhakre, **Dr. V Muralidhara**, "SMART SOLUTION FOR LOW FREQUENCY PROBLEM IN SMARTGRIDS" International Journal of Computer & Applications, Volume XII, Special Issue, ISSN 2321-3469, March 2018.
- **Smt. SavitaSangappanavar** "Simulation of Demand based Energy Management Systems" IJREAT, Volume 6, Issue 1, ISSN: 2320-8791, March 2018.
- **Smt. Priyashree.S, Vidya H A, Sumathi S, Triveni M T**, "Wavelet Based Power Quality Analysis of Induction Furnace using Fuzzy Expert System", International Journal of Scientific Research and Review (IJSRR), Volume 7, Issue 4, 2018 ISSN NO: 2279-543X, April 2018.
- **Smt. Champa P N, Ms.KruthiJayaram**, "Design and development of a laboratory kit module for a DC-converter", International Journal of Science and research (IJSR), Volume 7, Issue 5, May 2018.

"TALK-5"

- Talk-5 (T-5) is a workshop conducted for students of IV semester to motivate them to talk for 5 minutes confidently and fluently, benefiting them to interact in a better manner with outside world, face interviews effectively and confidently and have best communication skills. The workshop has been initiated and organized by **Prof. Eishwar N Maanay,** Dean (Administration), BNMIT.
  Mr. Venkatesha K, Mr. A Kumar, Ms. Kruthi Jayaram, Smt. Champa P N conducted Personality Development Classes from 23rd to 28th April 2018 under T-5 (Talk 5) workshop for IV sem, EEE.

According to the Central Electricity Authority, Government of India authority dealing in cross border electricity trade, India exported around 5,798 million units to Bangladesh, Nepal and Myanmar in 2016-17.

- Students of MTech (CAID) have secured First and Third in VTU exams during 2016-17.

Raja Rajeshwari A
1st Rank with Gold Medal
M. Tech (CAID), EEE

Harshithananda B
3rd Rank
M. Tech (CAID), EEE

- Students of BE (EEE) have secured First, Fourth and Ninth ranks in VTU exams during 2016-17.

Prathyusha A
First Rank with Gold Medal

Roopa M
Fourth Rank

Supriya N Hebbi
Ninth Rank

- The following students stood among Top 3 in their class in VTU examinations conducted during Dec 2017-Jan 2018.

Name	USN	Semester	Position
Chandana E Gowda	1BG16EE016	III Sem, BE	First
Prakruthi R S	1BG16EE031	III Sem, BE	Second
Bindu R	1BG16EE014	III Sem, BE	Third
Manasa K R	1BG15EE022	V Sem, BE	First
Mohamed Safeeulla	1BG15EE025	V Sem, BE	Second
Sumit Kumar Mishra	1BG15EE053	V Sem, BE	Second
Kavya B M	1BG15EE018	V Sem, BE	Third
Durgam Mallika	1BG16EE014	VII Sem, BE	First
Megha S	1BG16EE040	VII Sem, BE	Second
Dareddy Shravani	1BG16EE013	VII Sem, BE	Third

- **Syed Abrar** and **Swathi M** of IV sem, EEE won Best Project Award at Semester level for the project **"PLECO"** during IPL Summer Competition 2018 held on 4th May 2018.

Demo of "PLECO" during IPL Summer Competition

Syed Abrar, IV semester-EEE receiving Best Project Award

STUDENTS ACHIEVEMENTS

- Roshan S, Nayana R, Sushant Kumar of VIII sem exhibited their project "Human Energy Harnessing" in semi-finals of MANTHAN Business Competition 2018 conducted at FKCCI, by Karnataka State Government. Bangalore.
- Roshan S, Nayana R, Sushant Kumar of VIII sem exhibited their project "Human Energy Harnessing" at K KWagh Institute of Technology Nashik during National Level expo on Science and Technology 2018.
- Syed Abrar of IV sem, EEE has secured first place and Pradhana Puraskar in the Electronics design Challenge, 'The Kludge 5.0 2k18', held on 3rd and 4th of March 2018 at PESIT Bangalore South Campus.
- Syed Abrar of IV sem, EEE has received 'Transport Challenge Award' in appreciation to his significant contributions in the development of a prototype during the open Innovation Hackathon on "Smart Village-Karnataka, 2018".
- Bhavana V Gowda, Leelashri K, KruthiJayaram published a paper " Simulation of Closed loop control Dual input DC-DC converter using solar cell", International Journal for Science and Advance Research in Technology (IJSART), Volume 4, Issue 5, ISSN: 2395-1052, May 2018.
- Bindushree M.S, Dr. Raghunatha Ramaswamy, P B Savitha "Design & Hardware Implementation of battery charge controller for telecommunication systems", RTEICT Conference, May 2018.
- Niveditha Vaishnavi, Sushme D S, Shobhita R, Sri. A. Kumar "Energy efficient lighting System", National Conference on Advanced Techniques in Electrical & Electronics Engineering, May 2018.
- Srirama P R, Sri. Venkatesha K "Design & Hardware Implementation of 1KVA Uninterruptible power supply", National Conference on Recent Advancement in Electrical & Electronics Technology, May 2018.
- Keerthana. S, Monali G Pawar, Nayana.R, Spoorthi. R, Sri Divya C, Syeda Lubna, Manasa. K.R, Suparna Bose of EEE department won first place in Group dance in India Folk dance held at BNMIT by Kalabhageerathi, and were felicitated for excellent cultural ambassadors.
- Sri Divya of VIII sem, EEE was one in the throw ball team which won first place in the Inter department throw ball competition held at BNMIT.
- Manan Shah and Sumit Kumar Mishra of VI sem, EEE won second prize in Industrial Awareness Quiz conducted by Quiz club of BNMIT during 2018.
- Monisha S, Mohammed Safeeula, Shashank, Alagar Krishna of VI sem, EEE exhibited the project titled "Axidraw", in IPL Summer Competition 2018
- Shwetha S, Aslesh Kumar, Suporna Bose of VI sem, EEE exhibited the project titled "American sign Language Translator", in IPL summer competition 2018.
- Shwetha S of VI sem, EEE secured second place in Table Tennis conducted at BNMIT during 2017-18.
- Shwetha S of VI sem, EEE secured second place in Table Tennis during Kreedothsava 2018 held at BMSIT, Bengaluru on 18th March 2018.
- Shobhita Rajashekar of VI sem, EEE participated in 18th VTU Inter collegiate Youth Festival held from 11th to 13th April 2018 hosted by Angadii Institute of Technology & Management, Belagavi.
- Shobhita Rajashekar of VI sem, EEE completed Grade 3 in Trinity Rock and Pop vocals exam from Trinity College London with Level 1 Award during January, 2018.

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